Power and Interdependence:

International Intellectual Property Rights

in a Networked World[1]

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"Interdependence among societies is not new. What is new is the virtual erasing of costs of communicating over distance as a result of the information revolution."[2]

I. Introduction

Globalization and the rules and treaties that make possible the governance of an interconnected, networked international economy evolve in fits and starts. The central themes of international relations are invented and reinvented, but the issues of power and the management of global relations remain constant. Still, research on fundamental concepts such as transnational relations, complex interdependence, regimes, institutions, transgovernmental relations, and globalization continues to grow more subtle and sophisticated. Cooperation in a complex world often depends on the nuanced use of non-military power and influence. The use of intellectual property rights (IPR) to sustain the control of established corporate and governmental power has grown in significance since the early 1980s.

In this spirit, this chapter situates the ongoing debate concerning intellectual property rights and international intellectual property (IIP) management in a framework related to global power and interdependence. Most writings on intellectual property issues concentrate on what is and is not legally permissible given changing technological parameters. By contrast, this chapter treats international intellectual property in terms of efforts by established firms to defend and extend their power and position and to protect their business models in the face of technological change and global interdependence.

[2] Keohane and Nye 1998. 83.

As organizations increase in their innovative flare often wanes. In the intellectual property arena strong companies and countries seek to maintain advantage. They respond proactively by trying to reignite the innovative flare but also defensively to try to keep would-be competitors at bay (Christensen; von Hippel). Promising new technologies arise, so everyone still may benefit, but benefits are unequally distributed. Benefits may arrive more slowly and be smaller for those who need the most help. The economic gap between rich and poor companies and countries widens and the poorest countries fall further behind (Collier). The struggle is complex because the conflict pits gigantic corporate behemoths, often wedded to antiquated business models, against pesky, innovative startups that often can be crushed, purchased, or co-opted. These non-state actors are interdependent, but the power is asymmetrically distributed. The stakes are high -- domination of the emerging global information economy. So, the struggle to bend international rules, treaties, and institutions for self-interested purpose is intense.

The strong protection of intellectual property (IP), especially international intellectual property may run counter to the interests of innovators and traditional and developing societies.[3] Imposing strong IP protection limits and crowds out the distribution of what Keohane and Nye call "free information" that is created and distributed without financial compensation. Power and information are asymmetrically distributed. The proliferation of "commercial information" that is bought and paid for, by

[3] Intellectual property covers patents, copyright, trademarks, trade secrets and other more exotic protections. Patents industries (e.g., aerospace and biotechnology) rely on invention. Copyright industries (e.g., software and entertainment) are built on creative expression through literature, music, etc.

contrast, reinforces the power of strong states and commercial firms and may limit new ideas and innovators. Countries impose new nontariff barriers even as they lower or eliminate tariffs on imports. Similarly, as trade barriers are dismantled, global technology markets are being further regulated by ratcheting-up global IPR protection.[4]

In traditional societies elders passed down their wisdom to the next generation. It was their responsibility as ancestors to teach those that followed them what they needed to know. They were compensated with respect, not money. This mindset is alien to international negotiators who argued that pushing the world towards American-style strong intellectual property protection would ultimately lead to innovation in poorer countries. Under pressure from the industrial world, developing countries departed from their traditional position. However, they rapidly concluded that their positions were undermined by the new IP standards that they reluctantly accepted in 1994 in the TRIPs agreement during the last round of trade negotiations. (Maskus and Reichman 282) The developed world grudgingly backtracked, at least when it came to medicines, when they agreed to the 2001 Doha revision of the TRIPs agreement. (Barma, Ratner and Weber 28)

Two developments accelerated the breakdown of the status quo. First, despite claims that "information wants to be free," the commercialization of the airwaves and the proliferation of ISPs that offer Internet and Web access showed that users would pay for copyrighted and specialized information. Further, keepers of traditional knowledge were perplexed when outsiders, learning of ideas common in their societies, claimed this

[4] Countries and companies continue to try to improve their relative positions as tariff barriers fall. Countries often use non-tariff barriers and antitrust policy and companies rely more on standards and IP protection.

"newly discovered" intellectual property as their own. (McCalman 2002, 12-13) Second, on the international level, companies are pushing to globalize their control over their IP. The creation of global broadcasting, communication, and information networks fostered interdependence but also deprived the elders of their knowledge advantage. "We are no longer linked to our past by an oral tradition which implies direct contact with others (storytellers, priests, wise men, or elders), but by books amassed in libraries, books from which we endeavor - with extreme difficulty - to form a picture of their authors." (Levi-Strauss 1968) Today, oral traditions are turned into scientific notes and books and newspapers are in danger of being supplanted by video images on YouTube and the Web.[5] Students worldwide still absorb some traditional wisdom, but youth watch television and movies and learn what is new and what is cool from their peers, not their elders. They IM (Instant Message) their friends, update their lives on social networks like Facebook and MySpace, upload their photos and videos to Flickr and YouTube, stay on top of what is happening on deli.cio.us, do research on Wikipedia, and plan their next virtual World of Warcraft battles in Second Life.[6]

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[5] Google plans to create a vast online reading room by scanning and indexing all of the books in the Stanford and University of Michigan Libraries and additional volumes from the libraries of Harvard, Oxford, and the New York Public Library (Markoff and Wyatt).

[6] See Joichi Ito's video presentation at 23C3. Even diplomats are catching on. USC's Center for Public Diplomacy works with State Department officials in far-flung embassies to discuss public diplomacy issues and initiatives.

After assessing the impact of TRIPs on their economies, developing countries began, individually and as a block, to focus their efforts on improving their bargaining position in the Doha Round trade talks and in the World Summit on the Information Society (WSIS) talks.

Why is all of this relevant to a volume that builds on the ideas of Robert Keohane? The short answer is that the control and handling of property rights (the ability to own and manage economic assets) is a fundamental building block needed to forge and global governance regime. IIP provides an important example of how non-state actors and institutions are wielding their non-military influence. The underlying presumption of this chapter is that their self-interested IP initiatives, if left unchecked, could undermine efforts to cooperatively manage a globally interdependent ICT network infrastructure that is critical to future economic growth and technological innovation. Further this is not merely a question of fine-tuning. There is growing evidence that we are at a new inflection point in the development of communications networks, infrastructure, and applications. This inflection point requires a strategic change in how the pieces of the ICT infrastructure fit together, and thus a shift in how innovative applications evolve. From this point forward current commercial and government structures will be inadequate to deal with future developments. Unless there is adaptation in the IPR realm and elsewhere, global economic prospects will diminish, perhaps markedly. The analytical tools pioneered by Robert Keohane to study complex interdependence may

help fulfill the promise of this inflection point in global, converged ICT markets that permit a global economy.[7]

The next section considers the prospects if industrial countries and global firms succeed in using IIP rules to enhance their power vis-à-vis other countries and competitors. Sections III and IV assess the impact of recent international negotiations and U.S. law concerning IP on the global power balance. Finally, four scenarios for the future that relate to what occurs in the IIP arena are suggested. These scenarios lead to a set of recommendations on future approaches.

II. The Balance of Power Shifts

The major surprise of NAFTA and the Uruguay Round trade negotiations was the unexpected "progress" made on intellectual property. During the negotiations to create the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in 1994, trade ministers trespassed on the turf patrolled by the guardians of the Paris Convention for the Protection of Industrial Property (1883) and the Berne Convention for the Protection of Literary and Artistic Works (1886), which the United States did not sign until March 1989. The new, muscular WTO trumped an ossified World Intellectual Property Organization (WIPO). Signatories agreed that innovators should be fairly compensated for their ideas and that stronger, though not necessarily harmonized, IIP rights protection was needed. In short, rather than use a weak international institution

[7] As former Intel CEO Andy Grove noted, "an inflection point occurs where the old strategic picture dissolves and gives way to the new." (Grove Preface). The evidence and arguments associated with this claimed inflection point is spelled out in Cowhey, Aronson and Richards).

over which they exercised little leverage or create a new institution from scratch, the United States and other industrial countries shifted the negotiating focus to the WTO. Pressed to retain its relevance, WIPO met in 1996 to amend the Berne Treaty to take into account digital content and distribution.

Domestic and international IP protection, coupled with other regulations, traditionally maintained a delicate balance between the rights of innovators and the rights of users. Innovators pushed for greater protection; users sought affordable access. (Sell 1998, 107-140) Since the mid-1980s the balance has shifted in favor of IP owners and innovators as new domestic laws and international treaties broadened and strengthened the scope of IP protection and extended its range into new information arenas. Organized industry lobbying interests brought more money to the table than diffuse users so they usually prevailed. The net result was the expansion of the domain of intellectual property to cover "the intangible commons," what James Boyle has called "the Second Enclosure Movement". Some predict that this new extension of property rights will produce aggregate benefits to society on the scale associated with the first enclosure movement in Britain at the start of the industrial revolution. However, there also is concern that it could "slow down innovation, by putting multiple roadblock, multiple necessary licenses, in the way of subsequent innovation" (Boyle 44).

IP protection and property rights extension has moved into new areas. IP holders seem to assume "that the strength of intellectual property rights must vary inversely with the cost of copying" (Boyle 42). However, if this presumption becomes law, this change could threaten the freedom, creativity, and dynamism of the Internet and perhaps the pace of technological innovation. For example, the struggle over whether the FCC or the ITU

should impose Internet regulation that cedes significant control over its development to large companies is ongoing. Yet, if an appropriate balance is not maintained, the imposition of new IP standards could retard IT and wireless innovation, suppress creative risk taking, and undermine development prospects. For example, what should constitute fair use of digital information available online? The United States, the largest market for exports of most developing countries, believes that countries that are unwilling to open their markets, discourage piracy, and improve protection of American IP rights should be subject to trade sanctions.

The distinction between real innovations that deserve IP protection and opportunistic patent and copyright protection also has blurred. Thus, biotech companies now patent DNA fragments and molecules from tropical forest plants and organisms that might yield new pharmaceuticals. Simultaneously, they prevent developing countries from seeking primary patents by exempting "plants and animals other than micro-organisms" from patent protection. (TRIPs Article 27.3(b)) Process patents and "patent trolls" also are proliferating. Thus, Amazon.com claimed that the idea of one-click checkout was unique and patentable. Priceline.com made the same argument for its "name-your-own price" concept. The patent office concurred, granting broad, exclusive rights. Patent trolls buy up patents, often from a bankrupt firm without ever intending to use it themselves but only to charge others for its use.[8] So, when a newcomer spends

[8] According to Wikipedia "patent trolls" are entities that purchase a patent, often from a bankrupt firm, and then sues another company by claiming that one of its products infringes on the purchased patent. They enforce patents against purported infringers without ever intending to manufacture the patented product or supply the patented service

heavily and comes up with a real breakthrough, the holders of patents and copyright being displaced work to blunt the power of innovators. Others review their patent portfolios in order to charge a fee on any innovation that resembles one of their existing patents. Any new innovator that develops new processes or products that resemble existing patents or copyrights must anticipate that it will be subjected to expensive legal battles before it can proceed. Innovators respond in various ways, including embracing the concept of a cultural commons and the open source movement in software to try to free themselves from the grapples of Microsoft and other dominant players.[9] Even when a real breakthrough occurs, the innovator is likely to face sustained opposition to establishment of its right. For example, to establish it's CDMA2000 3G wireless standard Qualcomm had to break down a long-established patent pooling system run by the European telephone oligarchs.

Globalization and interdependence involve greater access to each other's resources and markets. But, to what extent should countries be open for trade and competition and allow further interconnectedness of their economies? Who should decide – the countries themselves or international treaties signed by states but administered by international institutions? What will it mean if huge corporations use

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themselves. They enforce patents but have no manufacturing or research base, or a patent troll focuses its efforts solely on enforcing patent rights.

[9] Only a major player is likely to resist corporate behemoths. For instance, Microsoft was embraced in China only after it recognized that given weak enforcement of Chinese IP laws, it was in Bill Gates words, "easier for our software to compete with Linux when there's piracy than when there's not" (Kirkpatrick 83).

their clout and expertise to ensure that they gain advantage from this global interconnectedness? So, as everyone competes, who should own and control information and ideas? What is it worth? How should creators and innovators be compensated?

III. NAFTA, WTO, and the Doha Round IP negotiations

In short, since the 1980s international intellectual property protection climbed much higher on the international economic agenda. Today, IP rules are tougher and more global, but not harmonized. The North American Free Trade Agreement (NAFTA), completed in 1993, provided for strong IPR protection in Canada, Mexico and the United States. (Other countries seeking NAFTA membership will need to accept these provisions.) A year later signatories to the Uruguay Round TRIPs agreement, which was built on the Paris Convention, agreed to support somewhat weaker baseline protection for copyright, patent, trademark, trade secret, and other forms of IPR.[10] In retrospect, who won and who lost?

The TRIPs agreement included a laundry list of ground rules that signatories promised to use to provide IP protection. Countries promised to extend IP protection to cover new and innovative processes and products including computer programs, integrated circuits, plant varieties, and pharmaceuticals. They agreed national treatment so the same IP protections applied for domestic and international, and for imported and locally produced goods and services. Poorer countries were allowed a longer transition

[10] Although the NAFTA accord was signed a year before the TRIPs agreement, the basics of the TRIPs accord were reached before the NAFTA agreement. This allowed the three countries involved in NAFTA negotiations to craft a somewhat stronger instrument.

periods to come into conformance with the treaty. The least developed signatories also could delay until 2016 before fully applying patent protection to pharmaceuticals. Implementation proved difficult to achieve because many developing countries had no existing IP institutions, few experienced experts, administrators or lawyers, and no judges with the necessary expertise. And diverting scarce funds and manpower to create such expertise was not a high priority. Moreover, concerns quickly arose that restrictions on technology transfer via TRIPs may be hampering development prospects. Even strong supporters of free trade like Jagdish Bhagwati attacked TRIPs, complaining that it has "distorted and deformed an important multilateral institution [the WTO], turning it from its trade mission and rationale and transforming it into a royalty collection agency," especially for drug makers (Bhagwati 182).

The NAFTA agreement focused on these same issues but was stronger because three countries were involved and because Mexico was motivated for the overall free trade agreement to succeed. Therefore, once ratified, the agreement could be put into force without a lengthy transition period for signatories to come into compliance. Specifically, Article 17 of the NAFTA agreement increased IP protection on four fronts in the Americas. (1) It widened the range of what could be patented and established a long patent period. (2) Copyright protection was extended to cover new technologies including software databases and sound recordings. (3) It narrowed the conditions under which compulsory licensing was allowed and beefed up contractual rights in copyrights. (4) The three signatories agreed to put the agreement into force quickly and to establish meaningful enforcement mechanisms to give it teeth (Callan 17-18).

The initial declarations related to TRIPs at the Ministerial Conference in Doha, Qatar in late 2001, clarified existing obligations, particularly with respect to implementation and set out a preliminary agenda. The Doha Declarations appear to aid developing countries by securing greater flexibility in using IP rights, especially as related to public health issues and domestically produced generic drugs. The Ministers at Doha issued a separate declaration on public health and intellectual property. In light of the international AIDS crisis and other public health emergencies, ministers acted to mitigate the tension between improving public health and strengthening IP rights. For example, South Africa and others desperately wanted to reduce the cost of treating their HIV/AIDS populations with expensive AIDS drugs. The Declaration recognized that to meet the demands of national public health emergencies governments like Brazil and India could suspend or alter certain IP rights obligations so that their firms could produce generics. Although the industrial countries and their pharmaceutical industries agreed to loosen their IP rights to deal with life-threatening epidemics, the United States and the EU made certain that profitable luxury and lifestyle drugs such as Viagra and weight-loss medicines were not granted more flexible IP treatment.

In addition to public health concerns, the Doha negotiations agreed to visit or revisit several issues raised by TRIPs that are important to developing countries. New issues discussed in the Doha negotiations included the use of patents, trade secrets, and copyrights to protect traditional knowledge and folklore, the relationship of the Convention on Biological Diversity to the TRIPs agreement, and provisions to enhance the transfer of technology to developing countries. Other issues include efforts to protect plant and animal varieties and to refine the use of geographic location identification (such

as the quality or reputation of products such as wine) to ensure that products originate from the place and manufacturer that is claimed. (McCalman 2004)

The United States long has been reluctant to join certain international agreements because it worried that doing so might restrict its sovereignty and freedom to act in its own interests. The U.S. refusal to sign on to agreements covering landmines, global warming, and the establishment of an international criminal court were in part driven by this concern. Similarly, the United States did not sign the Berne Agreement for more than a century to avoid having to repeal its own statute (17 U.S.C., section 601) that "required first publication in either the United States or Canada for a copyright to qualify for U.S. copyright protection under U.S. law." (Bettig 221) U.S. publishers could get around the law, but even when the statute was allowed to expire in 1986, some U.S. copyright owners opposed ratification of the Berne Treaty because it contains a moral rights clause that allows authors "to object to the any distortion, mutilation, or other modification, … which would by prejudicial to his honor or reputation." (Article 6bis) The television and movie industries that adapt creative works alter screenplays, or "colorize" old movies, opposed this provision. Interests that were gathering to fight piracy and promote IIP protection and enforcement prevailed and the United States signed the Berne Agreement. When the NAFTA and TRIPs agreements were negotiated, the United States made certain that they did not contain clauses related to moral rights.

The U.S. negotiators constantly reassured Mexico and other developing countries that the new IP agreements would benefit their economic prospects. Developing countries remain unconvinced and complain that the United States favors free trade when it is in their interest, but is protectionist when free trade undercuts American industries

like steel, agriculture, software, or Hollywood. They see the United States as rich, arrogant, high-handed, and often duplicitous.

A clear example of U.S. efforts to enhance their own industries came at the December 1996 WIPO conference in Geneva. Paraphrasing Pamela Samuelson, the United States pushed for, but did not achieve the establishment of new international IP norms for the information industry. It sought to (1) grant exclusive rights for copyright owners to control almost all temporary reproductions in the random access of computers; (2) treat digital transmissions of protected works as copies distributed to the public; (3) limit the power of states to limit or make exceptions to the exclusive rights of copyright owners even for fair use and first sale privileges, (4) allow copyright owners to challenge the manufacture and sale of technologies or services that would make it possible to get around technological protections of copyrighted works; (5) protect the integrity of rights management information associated with protected works in digital form; and (6) create new legal protections for the contents of databases. Along with their European counterparts, American negotiators pursued "high protectionist norms" that "would enable their industries to flourish in the growing global market for information products and services." (Samuelson 1997, 373)

In the aftermath of the Uruguay Round the United States continued to press to strengthen and harmonize IIP protection. In the absence of multilateral negotiations it embarked on negotiations to establish model bilateral free trade agreements (e.g. with Jordan) and bilateral investment treaties (e.g. with Nicaragua) that contained TRIPs-plus provisions on IP. The idea was to ratchet up the level of IP protection by combining a process of "forum shifting," with coordinated bilateral and multilateral negotiations, and

entrenchment of minimum acceptable standards of IP protection in international agreements." (Drahos) Developing countries were promised that if they went along with the multilateral IP accords the EU and the United States would relax some of the standards in bilateral discussions. This did not occur, although the EU was somewhat more flexible than the United States.

IV. Increased Domestic IPR and Enforcement: the DMCA

Finding and maintaining the right balance between innovators and users recurs as a critical challenge facing policy makers. Copyright guru Paul Goldstein frames the public policy dilemma this way: "if society withholds property rights from creative work, the price that producers can charge for access to it will begin to approach zero; their revenues will diminish and, with them, their incentives to produce more. But if society confers property rights on creative works, prices will rise and the information produced will reach smaller, wealthier (or more profligate) audiences, even though it might be that the work could be disseminated to everyone else at no additional cost." (Goldstein 177)

During the Clinton years the United States strengthened and extended the rights of property rights holders, especially with regard to digital content and distribution. Large commercial holders of IP such as the Intellectual Property Committee, the International Intellectual Property Alliance, sector groupings such as the Pharmaceutical Manufacturers Association, the Recording Industry Association of America, and the Motion Picture Association made lobbying for "hard law" and tough enforcement a priority for their members and for the U.S. government. Their most stunning success came in 1998 when the Senate gave teeth to legislation implementing the WIPO treaty amendments. What emerged was the Digital Millennium Copyright Act (DMCA) of

1998 that tipped the delicate balance between the rights of innovators and the rights of users in favor of large firms that owned the copyrights.

TRIPs on the international level and the DMCA on the domestic level represented victories for large commercial interests that "institutionalized a conception of intellectual property rights based on protection and exclusion rather than competition and diffusion." (Sell 2002, 172) Critics in the United States and elsewhere predicted that small, innovators in both the developed and developing worlds would suffer. There was significant doubt “that stronger IPRs stimulate local innovation, at least in the short to medium run” (Branstetter 369). Critics more focused on equity and development also worried that consumers in developing countries would transfer significant IP resources to developed country firms, but would receive little in return.

The Clinton Administration moved in support of the copyright industry. With the rise of digital rights, innovators were favored over users. The original Clinton administration Intellectual Property White Paper proposed giving copyright owners control over all digital copyrighted works, their reproduction and transmission. They would have eliminated fair-use rights whenever it could be licensed and deprived the public of first-sale rights (including electronic forwarding). The Clinton Administration proposed attaching copyright management information to digital copies of a work and to protect every digital copy of every work technologically. It was proposed that online services should be required to become copyright police responsible for implementing pay-per-use rules and that copyright rules should be taught to children in school. (Samuelson 1996, 136)

The White Paper was toned down. Still, it helped inform the Digital Millennium Copyright Act of 1998, which strengthened copyright protections. One key element of the DMCA was the "anticircumvention" provision that restricts the cracking of code that protects copyrighted material and the creation of code that cracks code that protects copyrighted material. (Lessig 187) This provision made it illegal to circumvent anti-piracy measures that are embedded within commercial software or to manufacture or distribute devices that can defeat unscramble encryption codes.

The fundamental criticism leveled at the DMCA (and other laws designed to protect IPR) was that they "are so broadly drawn that all sorts of companies might use it to stifle competition" (Wildstrom 26). Copyright protection grew out of print technologies. Built on English copyright foundations, American copyright law "created private rights to published works" while providing "for a legal public domain consisting of works on which copyrights had lapsed or to which it had never applied" (Starr 115).

The copyright industries are threatened by the changes transforming global online networks interactions, especially among digital youth. Social networking and mass collaboration changes market dynamics and business and social prospects. (Rheingold; Tapscott and Williams) Faced with new technologies, publishers and authors' executors have tried to prevent works from going into the public domain.[11] This effort was designed to counteract Web and broadband communications technologies that allow the widespread, inexpensive distribution of perfect copies of digitized information. So far

[11] Despite ambitious plans announced by Google, attempts to digitize works published after 1923 have proceeded slowly. So for there is not even a provision to release "orphan" works into the public domain when nobody claims to own the copyright.

digital books have not won widespread readership. But the question remains: what is the appropriate manner for protecting digitally distributed intellectual property? One insightful critic asked, "Who will "own" an interactive novel after it has been repeatedly been interacted with?" (Lanham 18). It becomes more difficult to effectively police and protect IPR that dynamically is reworked. The challenges for copyright holders of music and movies provide even more complex threats. In the face of significant drops in CD sales, the music industry is finally seeking new business models that are less dependent rigid IPR enforcement. The movie and broadcast industries, taking note of the music industries' travails has started to experiment with providing free downloads of shows and movies.

Copyright holders have attacked, with all the legal firepower at their disposal, efforts to use and modify IP in print and online. For example, in 2001 the heirs of Margaret Mitchell tried to quash Alice Randall's *The Wind Done Gone*, a parody or sequel of *Gone With the Wind* from the perspective of the African slaves in the household, arguing that the story was theirs to control until 2031 (extended from 1992 by the new copyright law). The novel was published, but the tremendous expense of the legal battle may discourage writers and publishers from issuing future parodies and sequels [12] (Lessig 198-199).

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[12] Similarly, in 2004 Edgar Rice Burrough's estate tried to curtail distribution of the novel *Tarzan Presley* published in New Zealand, claiming that it infringed on their IP rights by using the name Tarzan and aspects of the man-raised-by-apes character. The novel tells the story of Presley "raised by gorillas in the wild jungles of New Zealand, scarred in battles with vicious giant wetas, seduced by a beautiful young scientist" who

The music faces similar challenges. Is anybody surprised that teenagers around the world download music for free because they can? The more the music companies struggle to retain their old business model and prosecute offenders, the more negative the public's perception of them becomes. Legitimate sales of CDs are slipping worldwide legal online downloads are increasing rapidly. However, sales trends are diverging. According to Nielsen SoundScan figures CD sales in the first quarter of 2007 dropped 20 percent from the same period in 2006. Sales of digitized albums dropped by almost the same percentage while sales of individual digitized songs jumped by nearly 20 percent during the same period (Farrell). Record company losses are real, but losses claimed due to software and IP violations are inflated. The copyright industry wrongly assumes that all those who illegally copy music, videos, or software would otherwise pay full retail price to obtain the pirated intellectual property. (Schneier 25) The only real choice for music barons is to reinvent their industry and dramatically alter their business practices and approaches. This process began with the introduction of Apple's iTune technology in April 2003 and its wildly successful iPod music player that blazed the way in providing a mechanism for distributing music over the Internet and still maintaining an IP revenue stream.

The problem is not that someone gets copyrighted materials cheaply, because otherwise they would not get it all. It is routine for IP holders to charge less in poorer countries for their products and services than they do in major markets. Studios and broadcasters use variable pricing schemes to provide movies and television shows to

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gets a record deal with Elvis Presley's producer and has 30 No 1 hits. (Cardy) Tom Cardy, "Legal Eagles target Tarzan," *The Dominion Post*, December 2, 2004.

developing countries for what they can get, not for what they think they should get. Their goal is to reduce incentives to piracy while maintaining profitability. Property rights owners can swallow low rates of return if it discourages outright piracy and makes them less vulnerable to less expensive alternatives (e.g., Linux). IP rights holders often are as concerned with creating the legal precedent of compensation for their innovations as in the absolute amount.

Piracy and parallel imports are much more disturbing to copyright holders. Piracy from music to movies, from Naptster to China deprives legitimate copyright holders of revenue due to them. An even more serious problem comes when developing countries re-export cheap or pirated products to industrial countries impacting sales to those who could otherwise afford to pay. Hong Kong after its return to China provides an example. IP holders want to be paid top prices in Hong Kong, but recognize they need to discount their prices to sell to the rest of China. Even after China's entry into the WTO, there remains a huge temptation to re-export legitimate and pirated products from China to Hong Kong and beyond. The problem is magnified because films usually are available on the Web before they open in theaters. The same is true for music and bestselling books. To partially counteract this phenomenon, starting with *The Matrix Reloaded,* movies, books, and CDs now are released simultaneously everywhere, despite time differences.[13]

By contrast, the patent-based pharmaceutical industry faces a different challenge than copyright sectors. It is far more expensive to develop, test, and gain approval for

[13] Raymond Vernon's justly famous "product life cycle" has much less relevance in a globally networked world where new content is available to everyone at once.

new drugs in industrial countries than to promote a rock band. Moreover, patents on drugs are shorter in duration and more difficult to extend than copyrights on creative works. This creates incentives for pharmaceutical companies to concentrate on incremental improvements or on potential blockbusters that will sell for high prices to those who can afford them. There is little incentive to innovate on drugs for diseases that afflict the poor, so pharmaceutical company R&D does not concentrate on African and other tropical diseases because they do not believe that they will earn enough money to justify anticipated R&D expenditures needed to control these diseases. As a result, more R&D funds are spent by drug firms in industrial countries on diseases of pets than on diseases of the tropics.

Pharmaceutical firms are patenting the rainforest, but also seek full price for drugs everywhere. U.S. policy began to shift after the post-9/11 anthrax scare when Bayer, the sole producer of Cipro, the drug of choice for safeguarding against anthrax exposure demanded full patent payment. The United States, siting the potential health emergency, pushed the German patent holder to accept lower royalties. The existence of the HIV/AIDs scourge reinforced this rethinking of U.S. policy. It was impossible to deny that cheaper HIV/AIDs drugs should be available in Africa and other poor, stricken countries. This persuaded the Bush administration, with pharmaceutical industry acquiescence, to agree to Doha Declaration changes in TRIPs to allow for this. At the same time, the Bush administration staunchly opposed efforts to legalize the re-importation of approved drugs from Internet pharmacists located in Canada and elsewhere that would undercut pharmaceutical companies' patent payment receipts. Thus, the pharmaceutical industry is locked in a war to maximize their IP rights with users.

V. Intellectual Property and the Digital Divide

This chapter concludes with three cuts at international intellectual property issues: their impact on the digital divide, possible policy reforms, and their relevance within the international relations literature. A first consideration is whether the digital divide within and between countries is a temporary artifact of innovation, IP initiatives, and other policies or is it more permanent? To begin to grapple with this concern four scenarios are considered (things fall apart; wealth and poverty; living well is the best revenge; and sustainable growth) that can be arrayed according to whether the digital divide is widening or narrowing and according to resource sustainability.

[Insert Figure 1 Here]

First, to paraphrase Chinua Achebe, things could fall apart if the digital divide widens, resources are squandered, and the environment is overwhelmed. Manuel Castells argues that "uneven development is the most dramatic expression of the digital divide," that the "social unevenness of the development process is linked to the networking logic and global reach of the new economy," and that to be competitive within a networked world economy countries, firms, and individuals need easy access to global flows of capital and information (265). Further, the "transformation of liberty and privacy on the Internet is a direct result of its commercialization" (170). So, it is probable that if legitimate legal capital flows and information flows are restricted by stringent IP protections, alternatives will be found. If many in poorer countries are shut out of the new economy, global criminal activities will arise to create illicit transnational networks

instead. (Rose-Ackerman) Inevitably, such activities undermine the legitimacy and stability of governments and the civic culture and may lead to the destruction of the rule of law, the collapse of state authority, and even to violence and civil war.[14]

Second, the digital and economic divide could continue to widen while the economy remained relatively stable. This incremental, rich get richer, poor get poorer scenario might result in a segmented world with pockets of great wealth on islands of intense activity interspersed in seas of desperation. Information and IP catapults the techno-nomads and a few entrepreneurs ride to significant wealth, but most people tread water or fall further behind into poverty and insecurity. Sustaining such a world depends on the ability of the United States to use its military, economic, and information superiority to maintain the status quo.

Multinational firms are not the prime culprits responsible for poverty, corruption, and civil unrest. Most analysts agree that innovators should be compensated fairly for their breakthroughs so that they continue to invest in innovation. However, what constitutes fair use and fair payment varies across countries and sectors. Even IP hawks recognize that a "country's level of development heavily influences the values placed on IP rights. Developing countries are leery of strong IP protection, which favors innovators over consumers, creative production over diffusion, and private interests over social goals." (Callan 1) This requires innovators and users to readjust their treatment of IP as circumstances change. The pendulum swung in the direction of strong and more

[14] Cyberattacks aimed at crippling key networks increasingly erupt after politically provocative incidents. For instance in 2007 Russian hackers bombarded Estonia's ICT infrastructure after a Soviet era statue in Estonia was taken down (Vamosi).

harmonized IP protection during the 1990s, but it may now be starting to swing back towards balance.

Third, a more humane, but potentially disastrous scenario imagines that new technology and resource consumption will narrow the gap between rich and poor by pulling up the poor without sacrificing the advantages of the rich. In the words of Gerald Murphy, F. Scott Fitzgerald's friend, "living well is the best revenge." The well-being of future generations may be sacrificed to prop up those now alive. Anyone with assets can live well for a time if they sell off their assets and drain their bank accounts. If those in industrial countries are entitled to the good life, why shouldn't the billions in China, India, and elsewhere seek parity? IT advance could help bridge the gap, but if billions more people consumed and polluted at the same level as those in rich countries disaster would be likely. When resources are exhausted, individuals suffer, and civilizations may collapse.

If countries can burn through money and resources to maintain their lifestyles and improve the lot of others by relying on new breakthroughs, then Malthus was wrong. Technological breakthroughs may be magic pills that can improve everyone's situation while new ways to protect resources and the environment are devised. Some are confident that there is sufficient clean water and cheap energy to fuel growth and alleviate poverty and hunger. But, if they are wrong, future generations will face problems we make worse today. This scenario is preferred by the Bush administration even though the gap between revenues and expenses is huge and growing. But, can innovation close the gap while sustaining the planet?

Fourth, more optimistically, information and clean energy revolutions could be the instruments of sustainable growth and development that will lift the impoverished without decimating the planet. Communication and information technology needs could be inexpensive and widely available. None of the other alternatives leads to an equitable, sustainable future. To move this way, information needs to flow freely and IP needs to be a tool of innovation, not resistance. Instead IP holders usually threaten abusers with lawsuits and sanctions instead of enticing them to respect and protect IP through the use of positive rewards and incentives. The copyright industries increasingly threaten companies whose innovations make it possible to circumvent their IP and users of the offending material. This is consistent with the first three scenarios, but not with the fourth. To grope in this direction, IP rights need to be exercised on behalf of information development everywhere.

VI. Towards Rebalancing IIP

What is needed to restore the balance between innovators and users of IP, especially in developing countries? How might IP relations between industrial countries and firms and developing countries be improved? How might the IP balance between developed and developing countries be restored so that all sides benefit? Transparency, fairness, and generosity are required. Four steps would begin the process.

1. *Raise the bar for those claiming to establish intellectual property rights*. IP has become a tool to promote competitive advantage at the expense of would-be rivals instead of an incentive for innovators to innovate. Large firms use their financial heft and teams of lawyers to squash newcomers with new ideas. TRIPs in its present form may make achieving sustainable development more difficult for poor countries. Thus, IP

rights should be tied to the amount of money invested in research and development and not just to a fixed time frame. Efforts by copyright holders to extend the period of their copyrights should be curtailed and rolled back to help restore the balance between the IP protections afforded to innovators and the needs of users. In essence, strong property rights are only sustainable if they also lead to increased innovation and the extension of benefits to users.

*2. Promote local support for IPR in developing countries by a*ssuring that their domestic *innovators benefit.* Empirical studies suggest that strong IPR protection by developing countries increases both foreign direct investment and imports (Lesser). This finding has not convinced poorer countries to implement and enforce strong IP laws. Unless developing countries innovators also benefit from IP protection, they have little incentive to crack down on piracy. Curbing corruption and illegal IP activities will be ineffective unless there are legal, profitable opportunities available. The dilemma that needs to be overcome resembles the situation with foreign food aid. It may feed the population during a time of drought and starvation, but if countries rely on foreign food charity long term, local farmers have little incentive to plant their crops or to improve their agricultural techniques.

3. Provide foreign assistance to countries to implement their IP commitments and assist domestic entrepreneurs and firms develop opportunities tied to their national situation. Even countries that wish to create strong IP protection need help in creating IP laws and institutions. There is little appropriate expertise in most developing countries and spending scarce human and capital resources on establishing a system of IP protection is likely to be a low priority. Therefore, outside help is needed and ought to be

welcomed. As needed, foreign firms, governments, international institutions, and NGOs "should offer to advise countries that are drafting new legislation, help pay for local IPR improvements, and reward countries and firms that improve the IPR enforcement with favorable publicity indicating that strong IPR protection helped attract their investments" (Aronson 3). In addition, networking between universities, firms, and experts in developed and developing countries to train experts, transfer technology, and create local partnerships is desirable.

4. Developing countries need to keep it simple, honest, transparent and consistent. Greed and corruption discourage foreign investors and constrain the growth of legitimate business in developing countries. IP rules should be clearly articulated, transparent, and fairly and consistently enforced for both local and international copyright holders. Also, installing a coherent, well-trained and honest administrative and judicial system is important. For example, Botswana has grown rapidly since the 1980s in part because their mineral wealth was discovered after its administrative system was in place.

VII. Intellectual Property and International Relations

Will the globalization of intellectual property rights serve to widen or narrow the digital divide within and between countries? If rich countries and their largest firms maintain the upper hand versus poorer countries and smaller firms, how will that impact relations among these countries? If perceived inequities grow and developing countries cannot be competitive within a globalized, networked world economy, globalization could unwind into disarray. Information will not be free, but if new ideas and information are prohibitively expensive because of tough IP enforcement, those who seek these breakthroughs will take them by whatever means is available.

Similarly, if IP rights are strictly enforced, the digital divide persists, and growth and resource use slows substantially, the gap between rich and poor will grow. Large-scale piracy may discourage R&D and innovation, but profit maximization can be unsettling. The rights of IP holders need to be balanced against the benefits from affordable access to innovations. The poorer the country, the less they can afford and the greater should be the price break for legitimate users. Otherwise, great wealth amidst a sea of poverty will become unstable, requiring the United States to act to keep order. Fortunately, the spotlight recently shined on Africa and other desperately poor regions shows signs of leading to greater flexibility and balance on IP issues in international negotiations, despite gridlock on other Doha round concerns as of late July 2007.

Even if the gap between rich and poor narrows because developing countries growth spurts using scarce resources, this is problematic. Without water, oil, and critical resources decline continues and violence and conflict grow more likely. If access to affordable information resources continues to grow, the outlook would improve. Longer-term sustainability requires information and communication technology to be available globally. To do so international institutions, governments and innovative firms need to readjust their treatment of IP so that the information revolution is global and the culture and practice of intellectual property evolves. Education, positive incentives, and the exercise of IP rights with compassion are at least as important as threats and legal enforcement. IP rights need to be exercised on behalf of information development and sustainability, not just profit. If this can be accomplished it would be an important step towards building trust and cooperation in a complex, interdependent world

Figure 1

Four Scenarios

	Non-sustainable Resource Use	**Sustainable Resource Use**
Widening Digital Divide	**THINGS FALL APART**	**WEALTH AND POVERTY**
Narrowing Digital Divide	**LIVING WELL IS THE BEST REVENGE**	**SUSTAINABLE GROWTH**

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